

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
10 February 2005 (10.02.2005)

PCT

(10) International Publication Number
WO 2005/011524 A1

(51) International Patent Classification⁷: **A61F 2/00**,
A61L 27/38, C12N 5/06, A61K 31/715

(21) International Application Number:
PCT/JP2004/001024

(22) International Filing Date: 2 February 2004 (02.02.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2003-285476 1 August 2003 (01.08.2003) JP

(71) Applicant (for all designated States except US): **CARDIO
INCORPORATED** [JP/JP]; 4-15-5-302, Temma, Kita-ku,
Osaka-shi, , Osaka 5300043 (JP).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MATSUDA, Hikaru**
[JP/JP]; 20-5, Oharacho, Ashiya-shi, , Hyogo 6590092
(JP). **SAWA, Yoshiaki** [JP/JP]; 8-3, Kendanicho, Nishi-
nomiya-shi, , Hyogo 6620099 (JP). **TAKETANI, Satoshi**
[JP/JP]; 5-13-3-2804, Nakanoscho, Miyakojima-ku, Os-
aka-shi, , Osaka 5340027 (JP). **MIYAGAWA, Shigeru**
[JP/JP]; 3-10-36-305, Nishimidorigaoka, Toyonaka-shi,
Osaka 5600005 (JP).

(74) Agents: **YAMAMOTO, Shusaku** et al.; Fifteenth Floor,
Crystal Tower 2-27, Shiromi 1-chome, Chuo-ku, Osaka-
shi, , Osaka 5406015 (JP).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,
GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— as to non-prejudicial disclosures or exceptions to lack of
novelty (Rule 4.17(v)) for all designations

Published:

— with international search report
— with a declaration as to non-prejudicial disclosures or ex-
ceptions to lack of novelty

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: **THREE-DIMENTIONAL TISSUE STRUCTURE**

(57) Abstract: The present invention provides a prosthetic tissue or sheet capable of withstanding implantation operations, which can be used in actual operation and can be produced by culture. The present invention also provides a novel therapy which can substitute for cell therapy. Particularly, the present invention provides a method for producing a prosthetic tissue comprising a cell derived from a part other than myocardium and capable of withstanding implantation operation. The above-described objects of the present invention were partially achieved by finding that by culturing cells under specific culture conditions, the cells are unexpectedly organized into a tissue, and the resultant prosthetic tissue is capable of being detached from culture dishes. The present invention also provides a three-dimensional structure applicable to heart, comprising a cell derived from a part other than the myocardium of an adult.

WO 2005/011524 A1